

# Pre-injector Upgrade Updates (22 Dec 2010 – 19 Jan 2011)

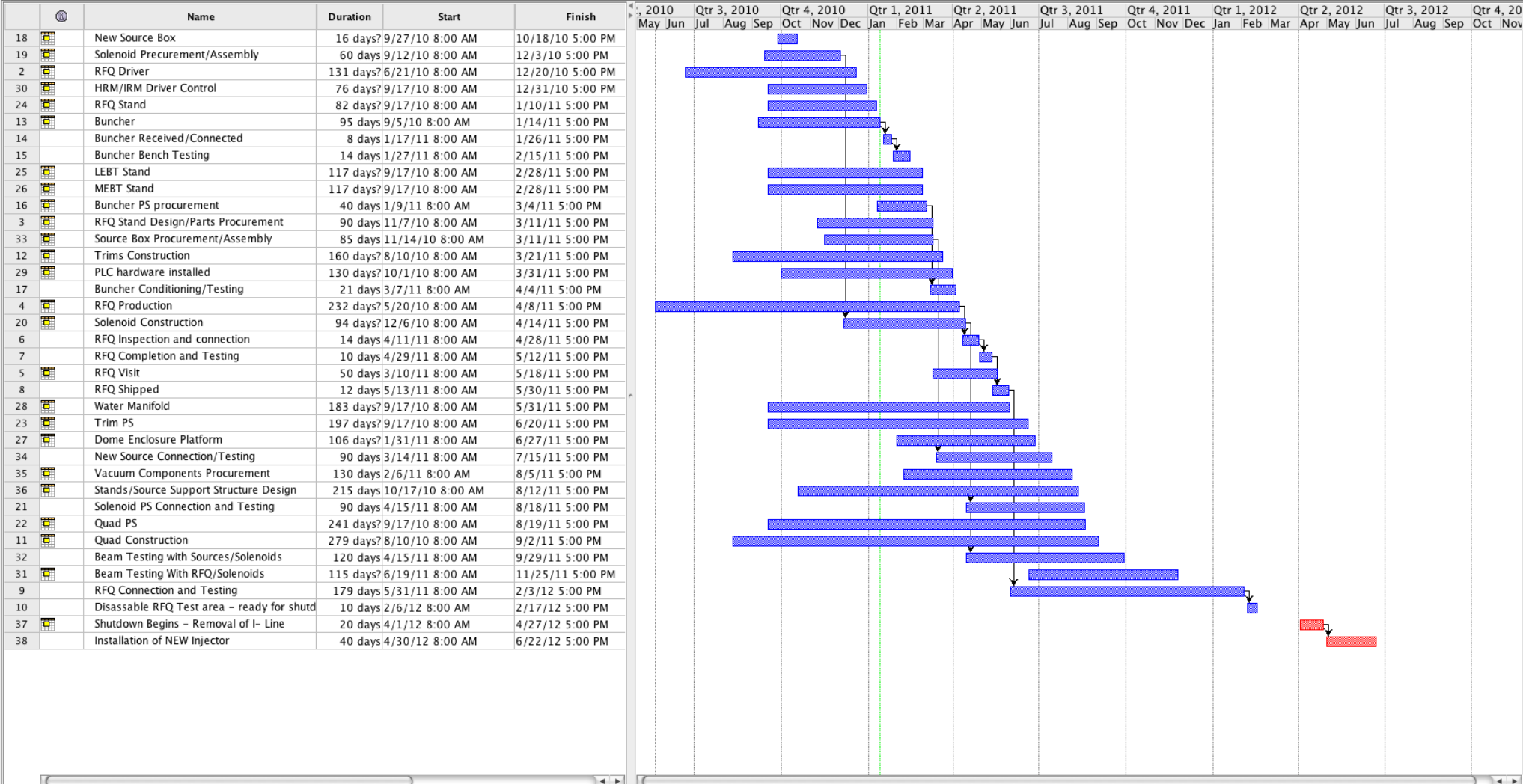
C.Y. Tan  
19 Jan 2011

OPENPROJ™

No Filter

Finish date

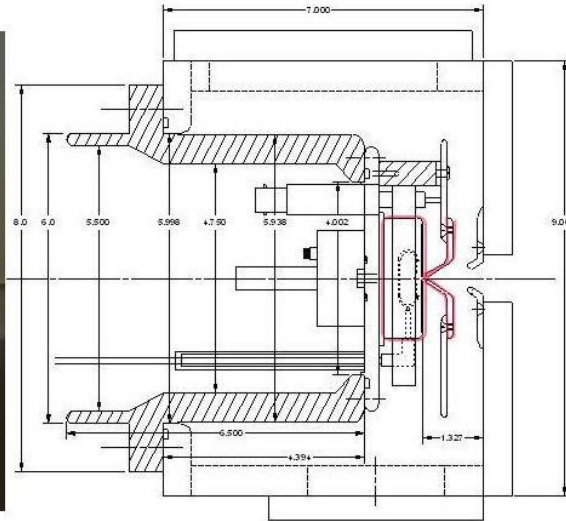
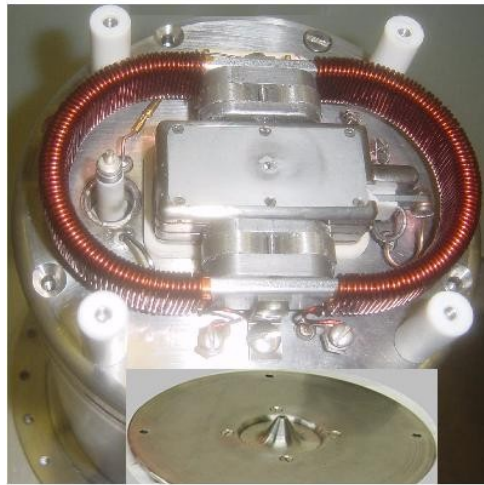
No Group



# Review in February

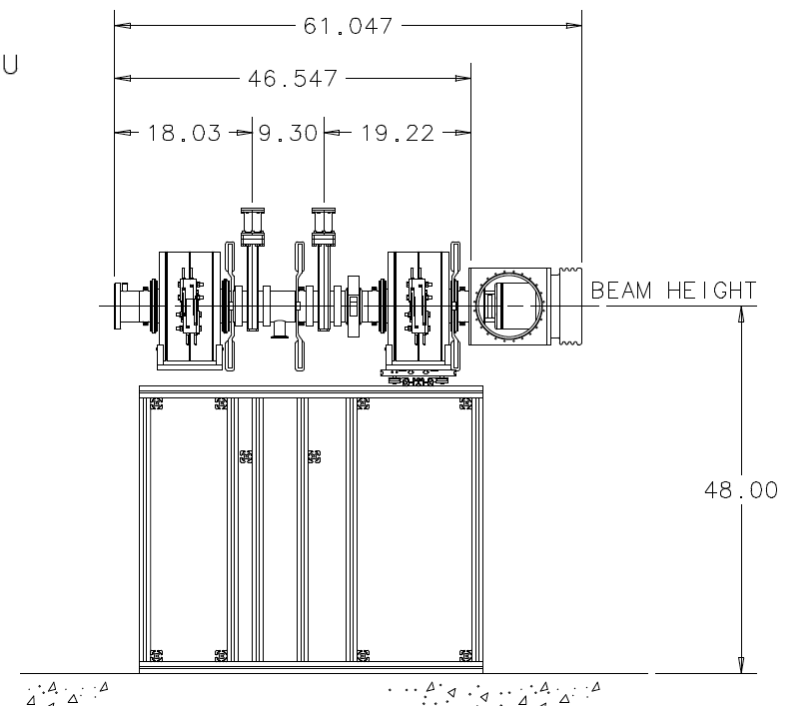
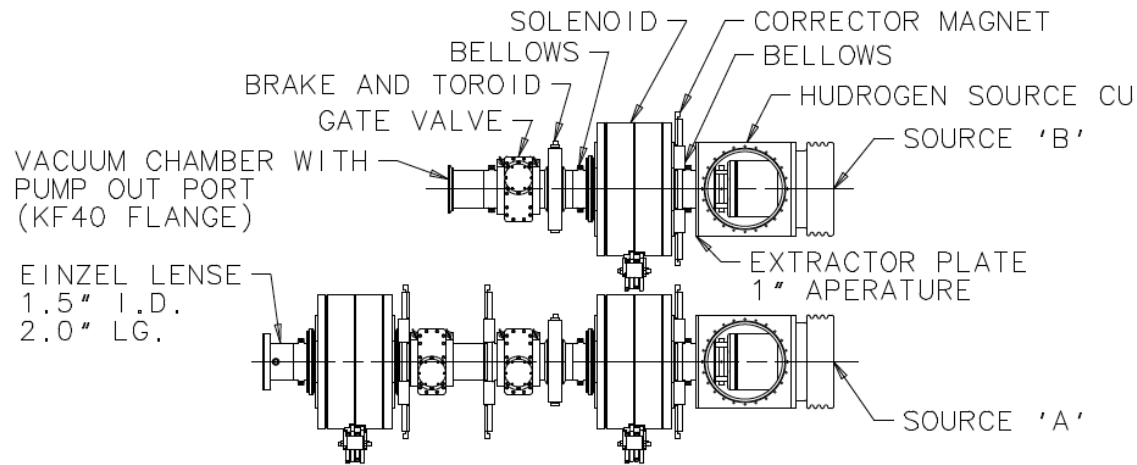
- Write up has started.
  - People should start filling up their sections.
- When is it going to happen?

# Source Status



Device	Status	Comments
Source is returned to HINS	Drawings being made	Cube has been procured.

# LEBT Status



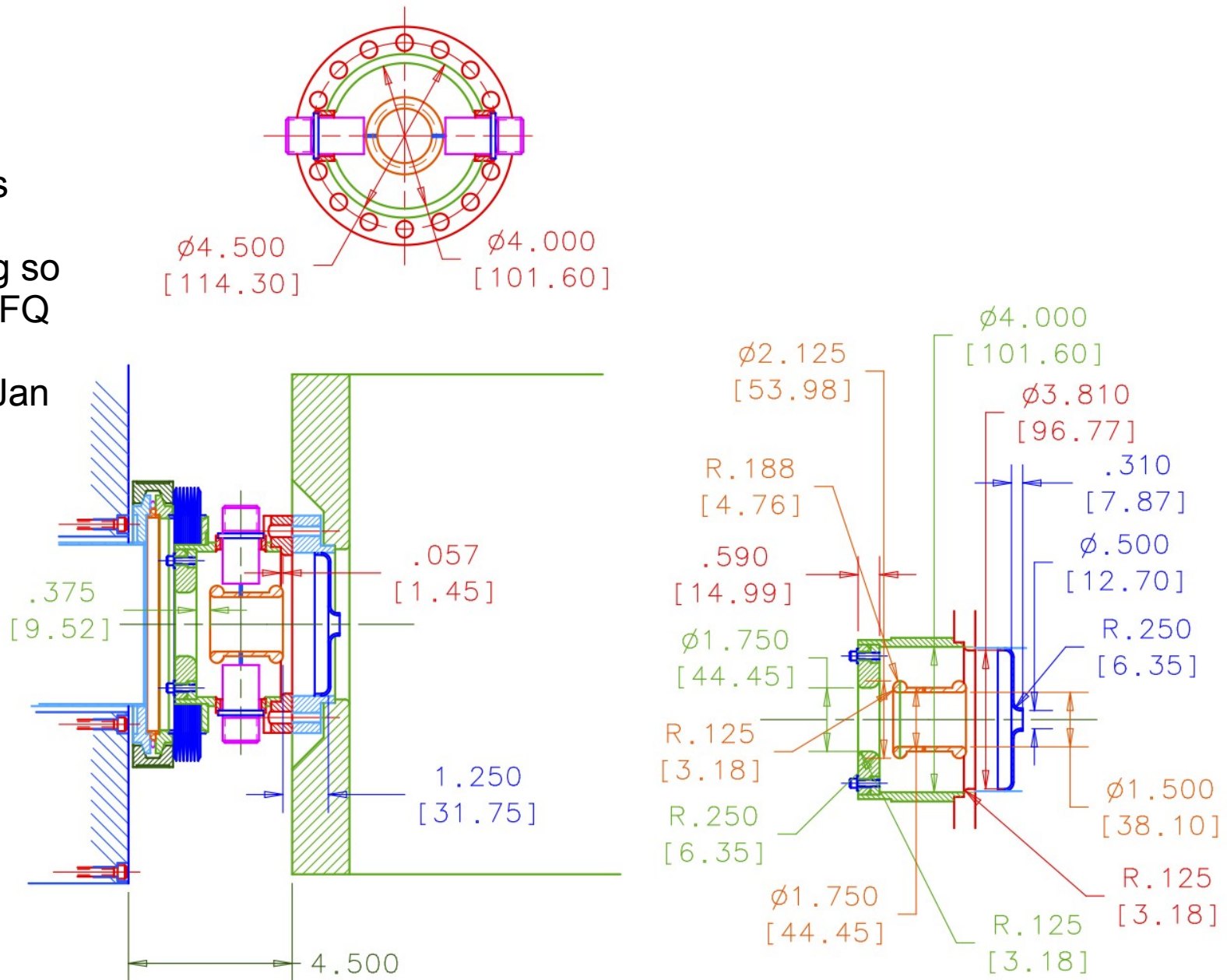
Toroids  
Einzel lens  
Solenoids

Aisha is looking into making a special Pearson toroid with length ~1.5" for MEFT. Quote to come in next few days. Electronics 80% done.

Preliminary drawing of Einzel lens. See next page.

Lots of problems with windings. Windings have stopped, waiting for tooling.

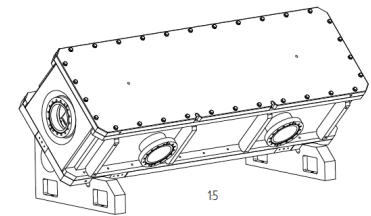
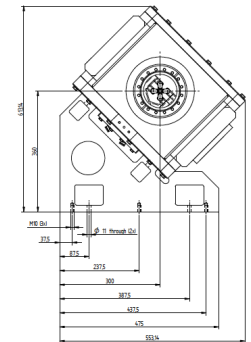
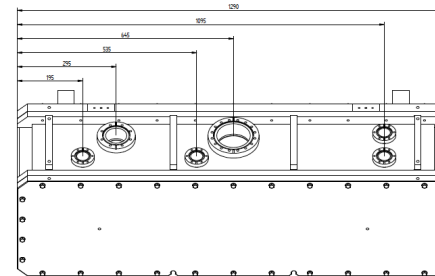
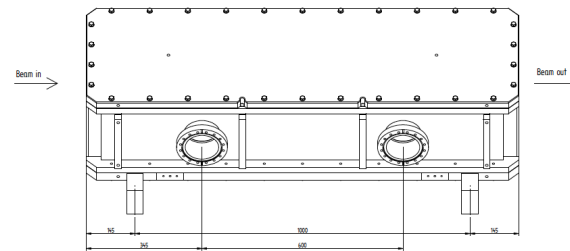
Schemmp has indicated that aperture being so close to the RFQ vanes is not a problem. (12 Jan 2011 phone conversation)



50 kV  
6" CONFLAT FLANGE  
12 BELLOWS MEMBRANES

# RFQ Status

- Copper plating of RFQ housing is complete. (Dec 2010)
- Vanes being machined. (Jan 2011)
- Visit in March (tentative)







Vacuum  
chamber

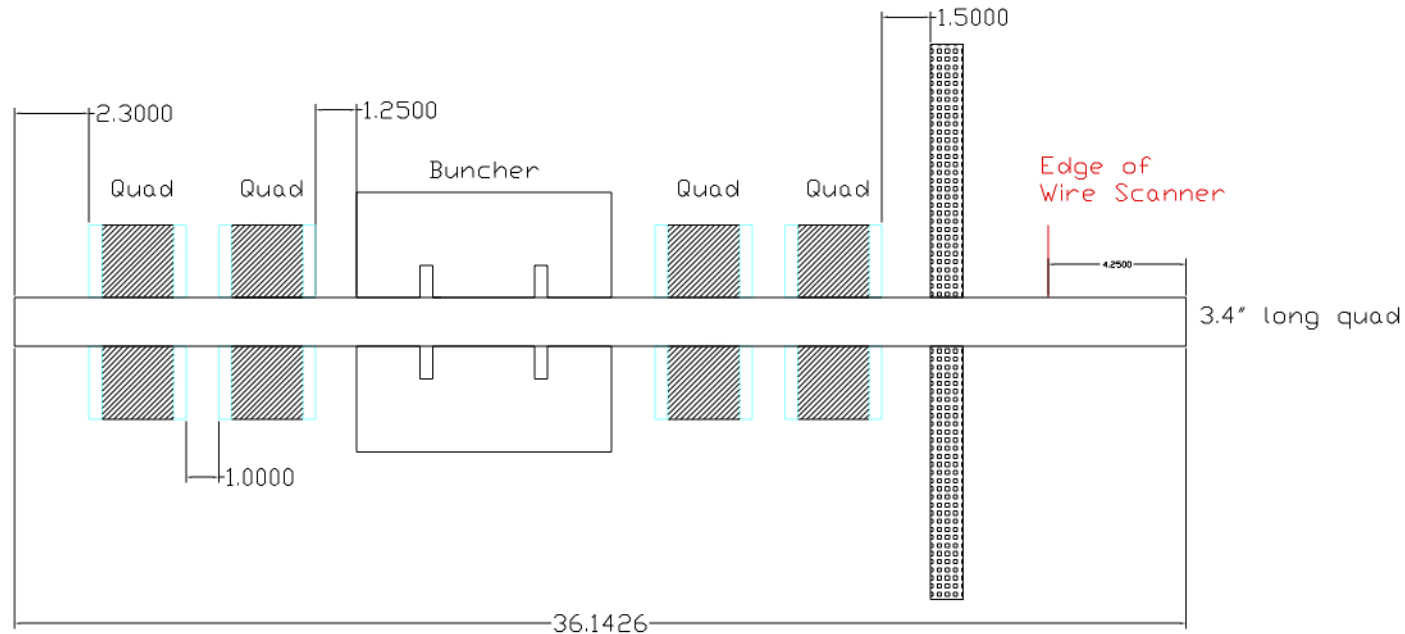


Tuners

13 Jan 2011

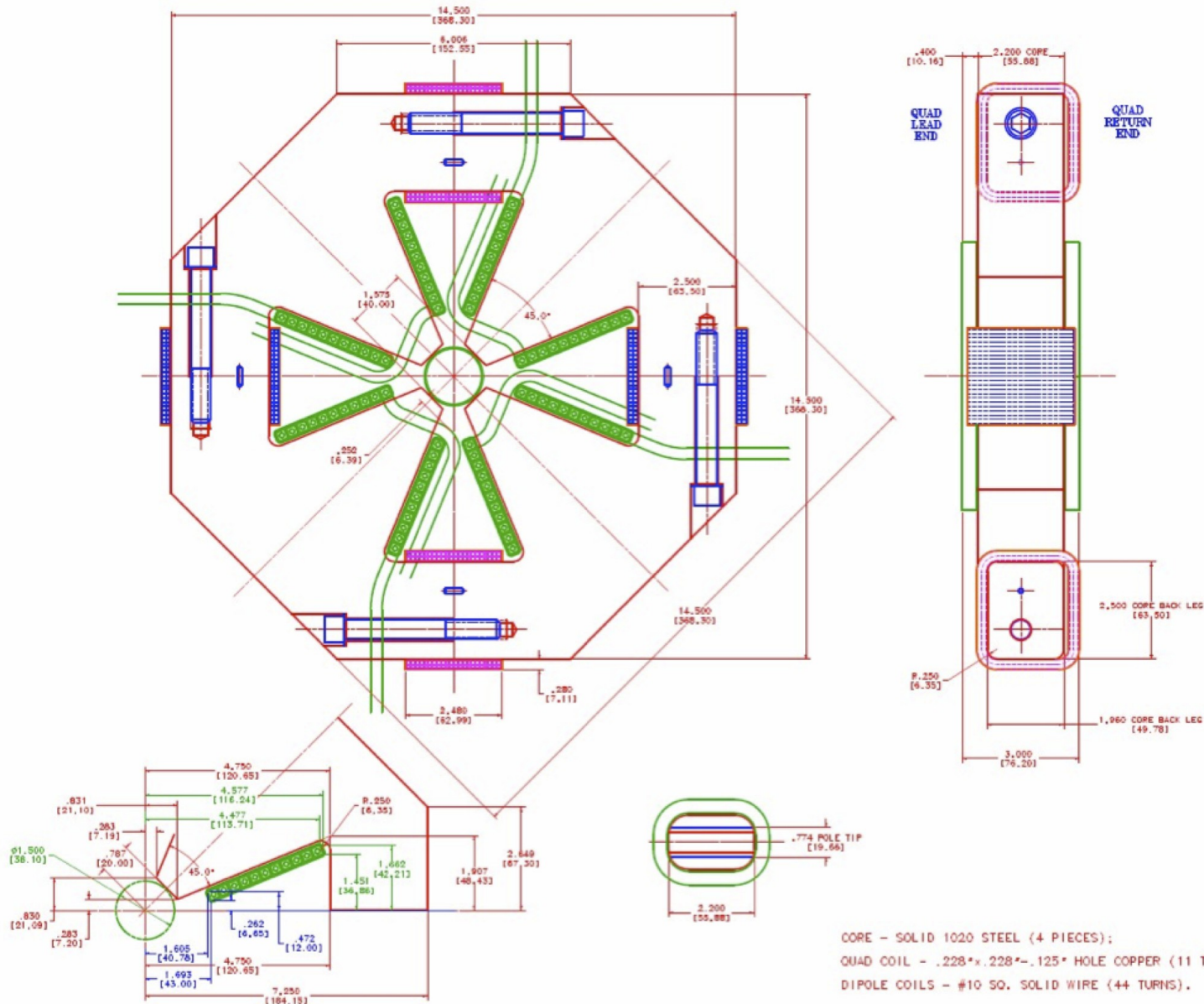


# MEBT Status



Quads	New quads have been designed with correctors.	See next slide.
Buncher	TIME has completed the beadpull for no grids	Discussion with BNL and Time about insertion of grids.
Power for quads	Specs to follow	Quads being redone.
Power for buncher		Use present buncher supply in the line.
Connection to Tank	Remove large flange of Tank1	

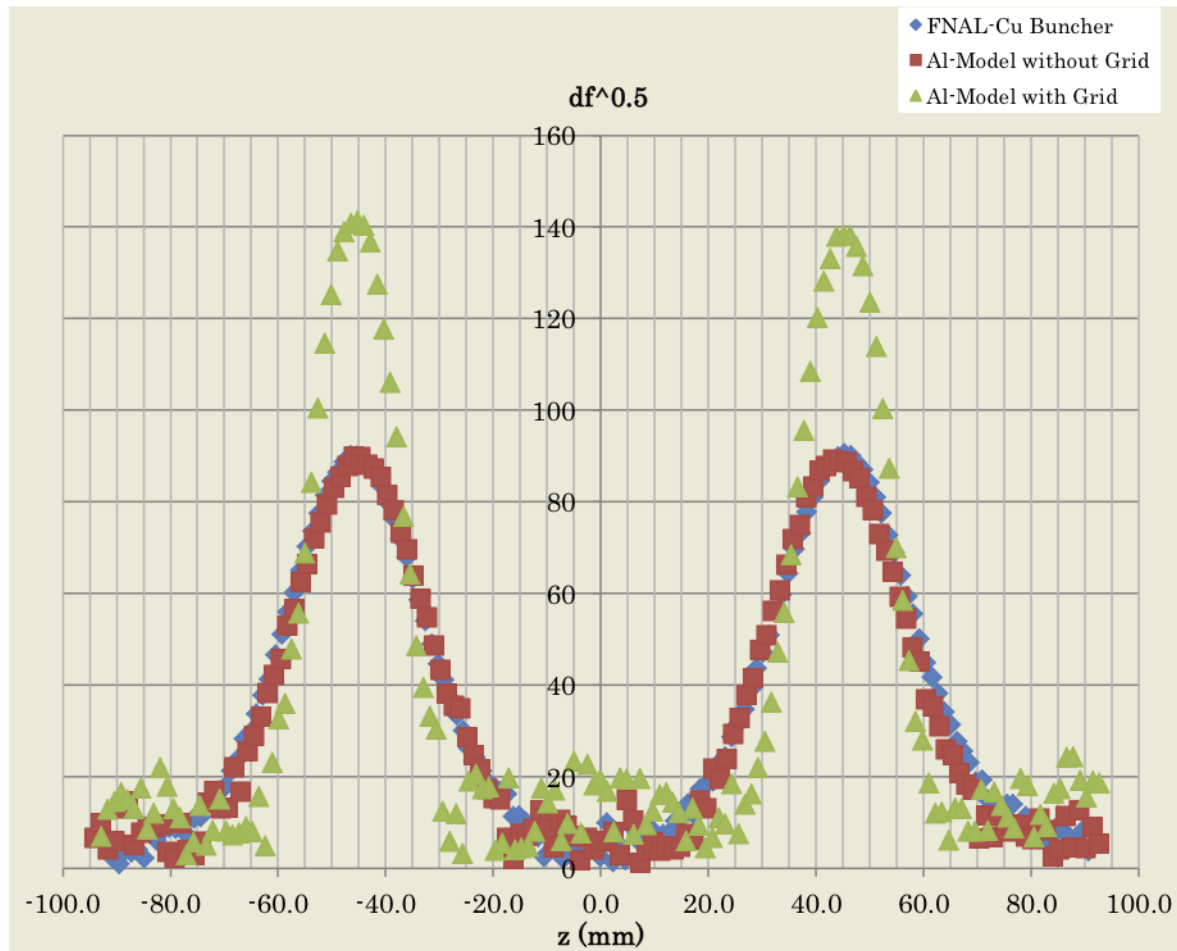
# MEBT Quads (to be changed)



2.2" core  
length.  
Physical length  
3.4" (not 3")

CORE - SOLID 1020 STEEL (4 PIECES);  
QUAD COIL - .228"x.228"-.125" HOLE COPPER (11 TURNS);  
DIPOLE COILS - #10 SQ. SOLID WIRE (44 TURNS).

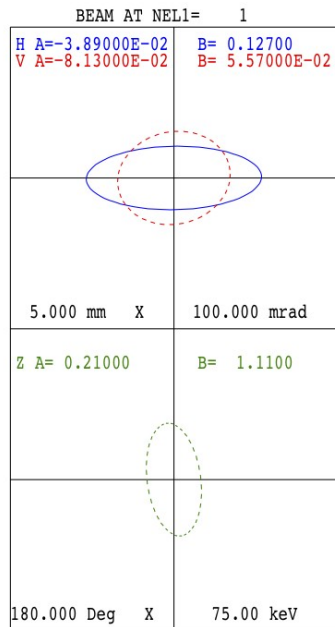
# Buncher



Concern about the insertion of grids because it will scratch the copper surface.

Discussion with BNL and Time.

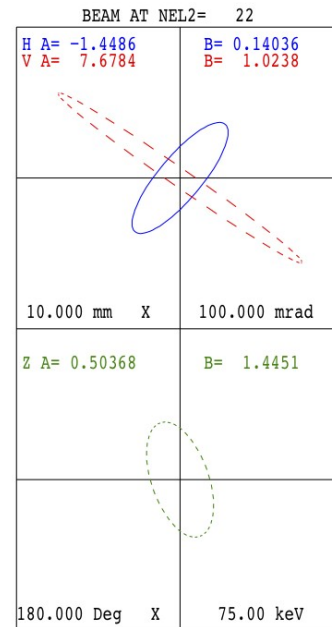
# MEBT Simulations



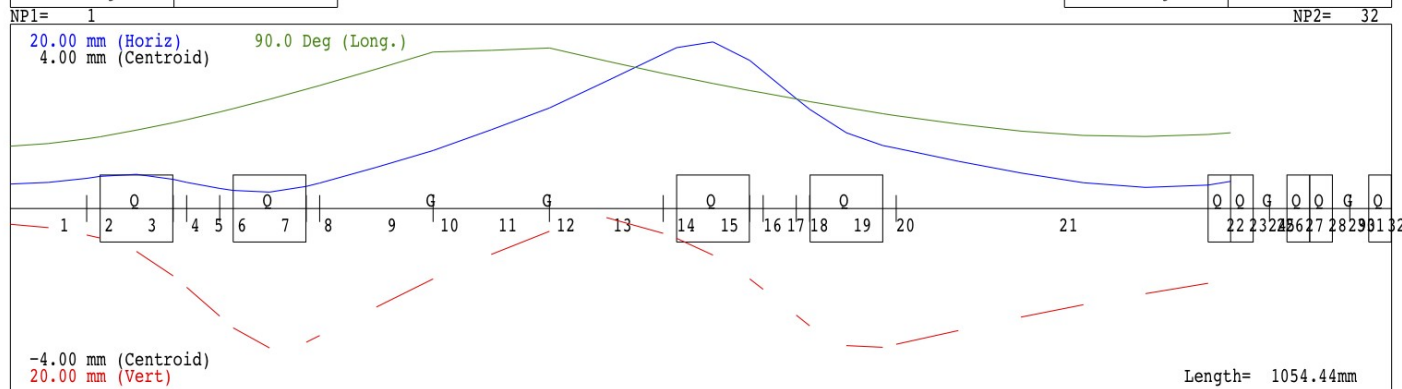
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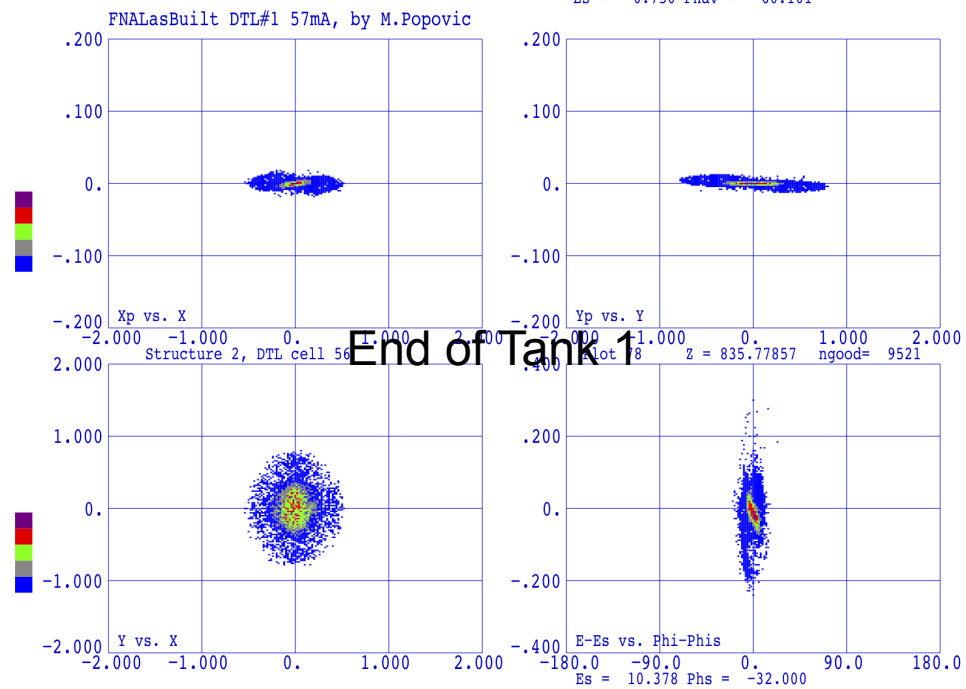
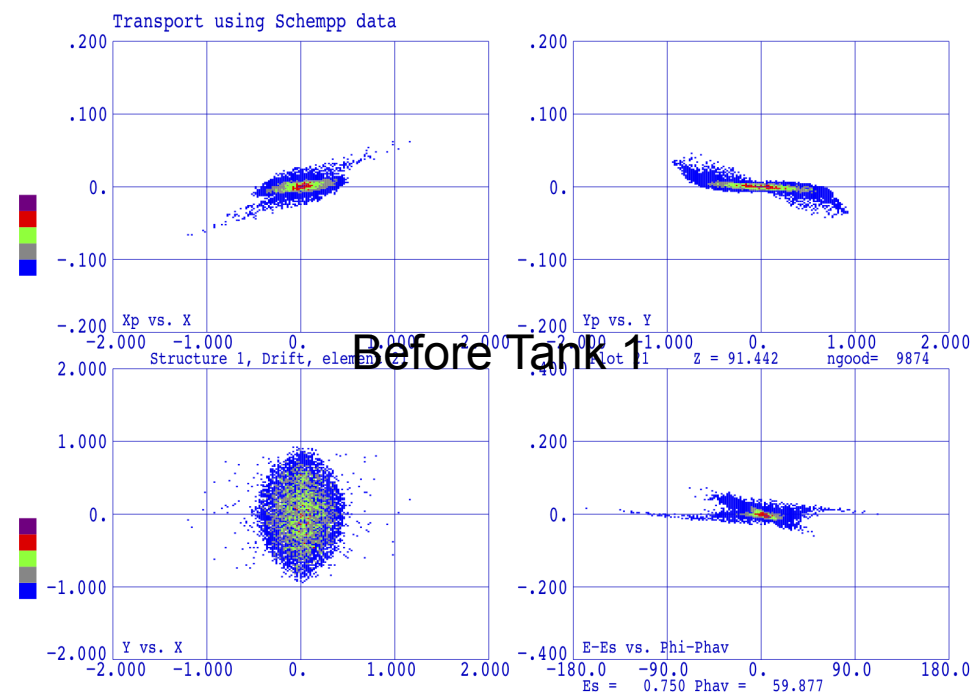
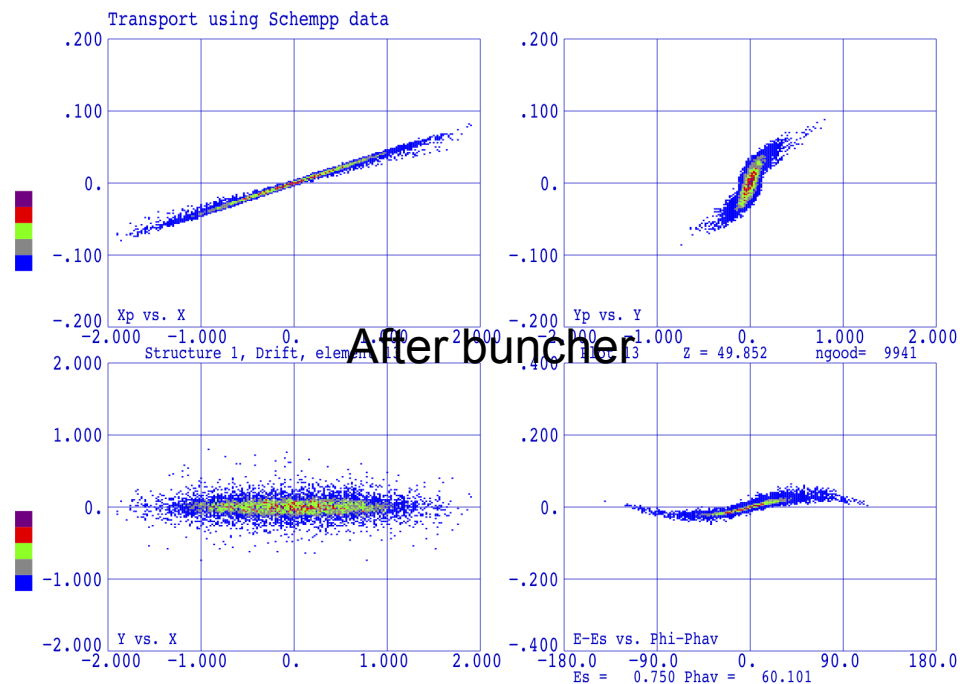
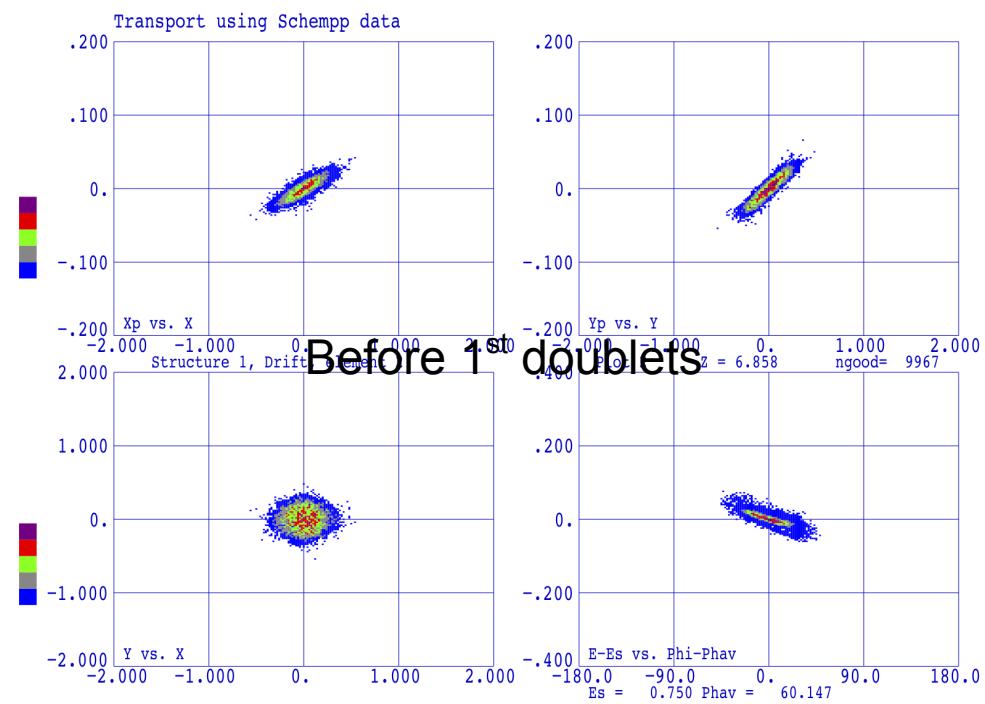
I= 60.0mA
W= 0.7500 0.7500 MeV
FREQ= 201.25MHz WL=1489.65mm
EMIT= 56.850 53.400 840.00
EMIT= 61.922 54.532 950.35
N1= 1 N2= 22
PRINTOUT VALUES
PP PE VALUE
1 2 10.16000
1 4 10.16000
1 6 10.16000
1 10 0.03938
MATCHING TYPE = 9
DESIRED VALUES (BEAMF)
alpha beta
x -1.7887 0.1459
y 5.5551 0.8328
z 0.6435 1.6660
MATCH VARIABLES (NC=5)
MPP MPE VALUE
1 3 -37.94899
1 7 30.33491
1 15 -23.66967
1 19 22.24955
1 10 0.03938
  
```

CODE: Trace 3-D v69ly  
 FILE: fnal doublets2a.t3d  
 DATE: 01/19/2011  
 TIME: 08:46:47



Beam is largest horizontally in 2<sup>nd</sup> doublet.

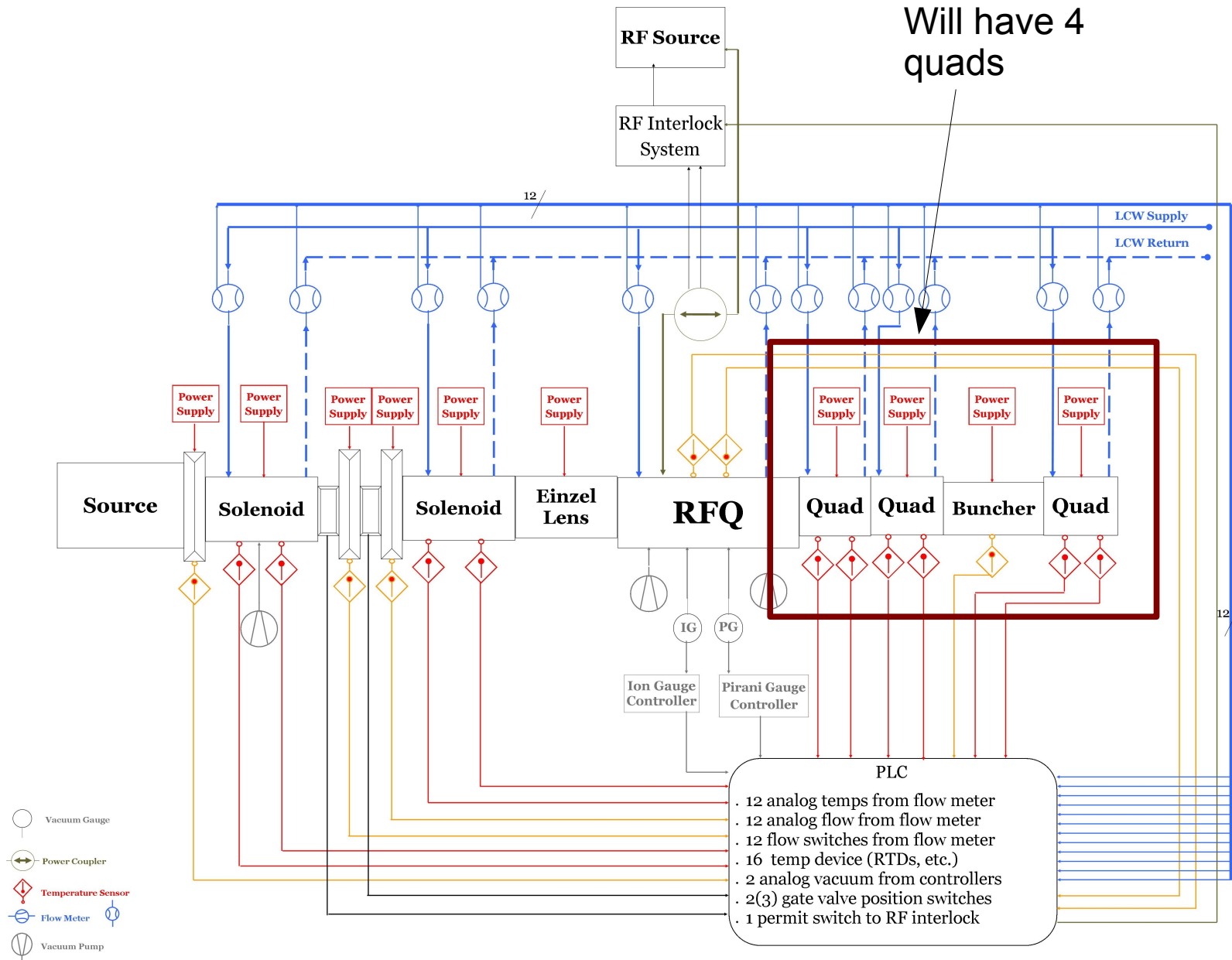




95.5% capture at end of Tank 1



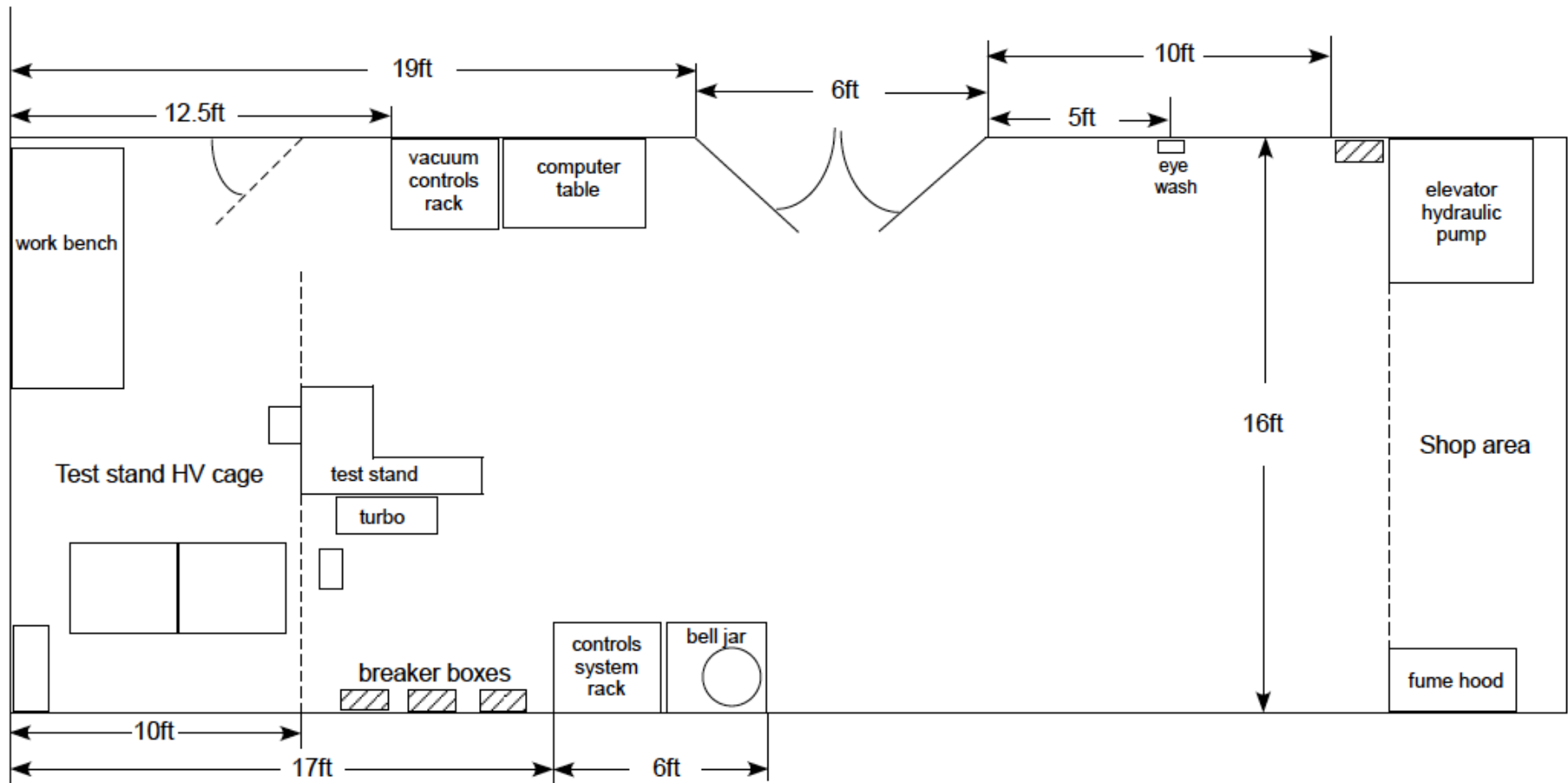
# Controls

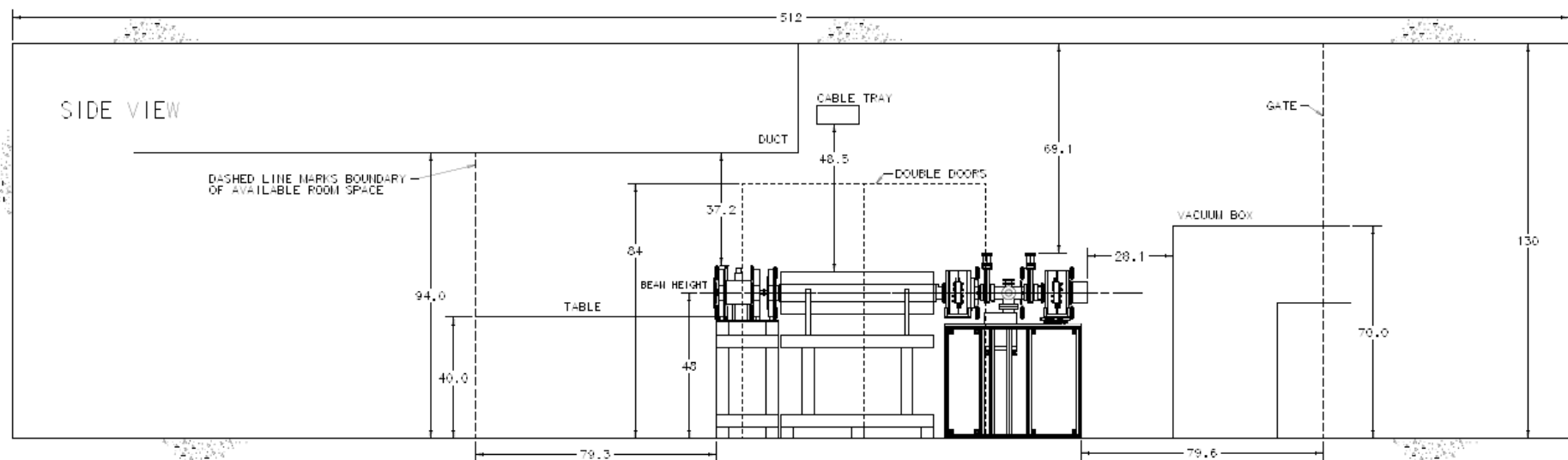
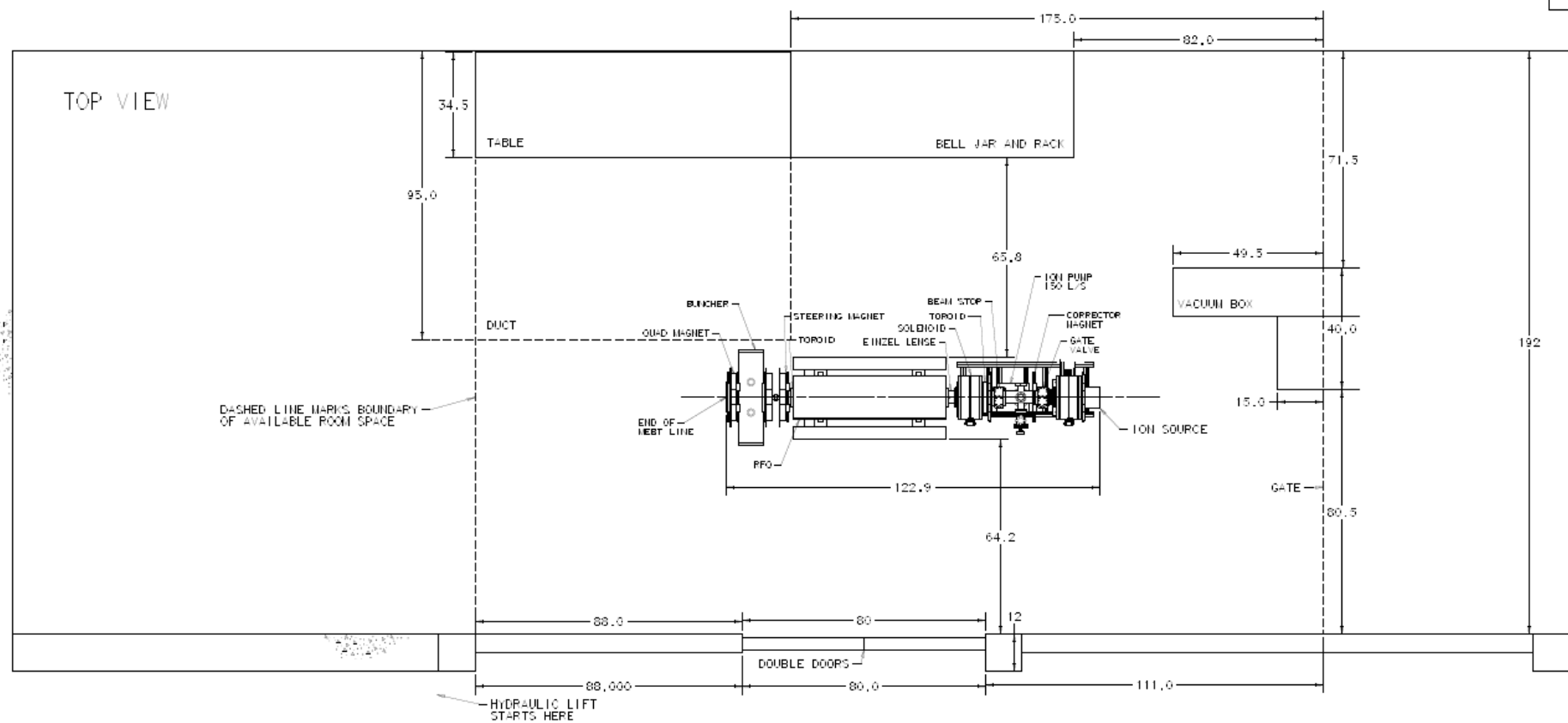


# Test Stand

- Room has been cleaned up.
  - Beam line layout in progress
    - Water – Bob Slazak
    - Electrical – Jim Ranson
- Need to test LEBT before RFQ connection
  - Wires, toroids at the end of the LEBT, same position as the RFQ.
- Design diagnostic line.
- Drawings from Schempp are sufficient to build table.

# Test Area





# Safety

- When can the beam line layout in test area be done?



# RFQ reminders

- Schempp is vendor
  - Make sure that the vanes are cleaned! See ISIS email.
    - Some cleaning details supplied by ISIS.
  - Review and verify on site mechanical design and construction (already in contract).